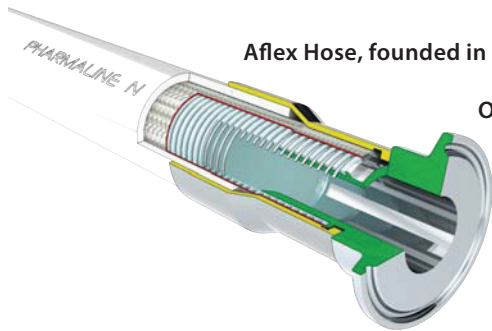


Pharmaline N and X - The New Product Design from Aflex Hose

The World's Leading Manufacturer of PTFE Flexible Hose



Aflex Hose, founded in 1973, pioneered the concept of PTFE lined flexible hose for the transfer of process fluids.

Over the years since then, hundreds of thousands of custom-built PTFE Lined hoses have been designed and manufactured by Aflex Hose to cope with the most difficult of operating conditions, and Aflex have continuously developed and expanded their product range having pioneered and introduced Antistatic hose, EPDM and Silicone Rubber Covered hose and many other innovations in response to customer demands.

Total Manufacture

The primary reason for the success of the Aflex Hose range of products is that Aflex is the only PTFE hose company in the world to carry out all the hose design and manufacturing operations in house, from raw materials to finished products, at Aflex Hose plants in Yorkshire (UK) and Pennsylvania (USA).

- PTFE powder is extruded into tube and convoluted.
- Stainless steel wire is wound and braided onto the tube.
- Rubber extruders are used to apply external covers.
- End fittings are machined from bar stock on state of the art CNC lathes.
- And, finally, the hoses are assembled to individual customer requirements.

Because Aflex Hose perform all these operations in house, Aflex is able to achieve unbeatable levels of build quality, design excellence and economy of scale, which are unmatched by our competitors.

Pharmaline N and X Hose Design

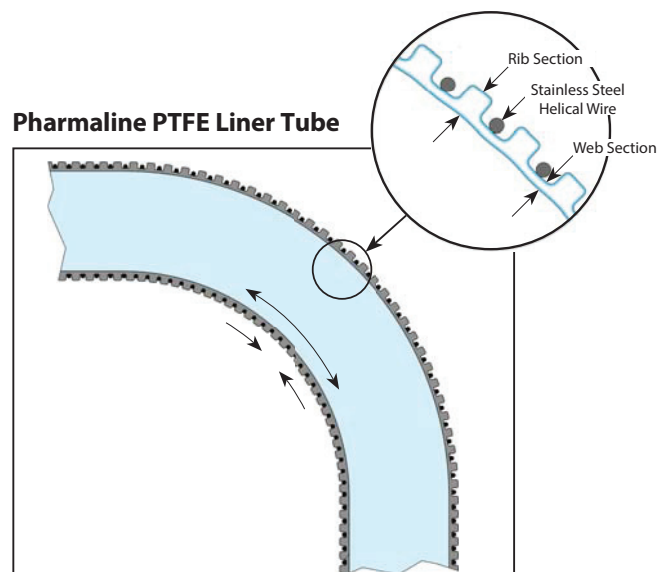
Pharmaline and Pharmalex hose were developed and introduced by Aflex Hose in 2005, specifically to provide customers with a new smooth bore, silicone covered PTFE lined hose which had better flexibility than the other products which were available commercially.

In response to customers requests, Pharmaline N and X hoses have been designed and introduced to replace Pharmaline and Pharmalex with hoses that have further improved flexibility and kink resistance. At the heart of the Pharmaline hose designs is the PTFE liner tube, smoothbore on the inside and convoluted on the outside. Most of the sizes now include a 316 SS helical reinforcing wire wound in to the convolutions, as well as an improved convolution profile. These support the tube against the effects of severe flexing and vacuum.



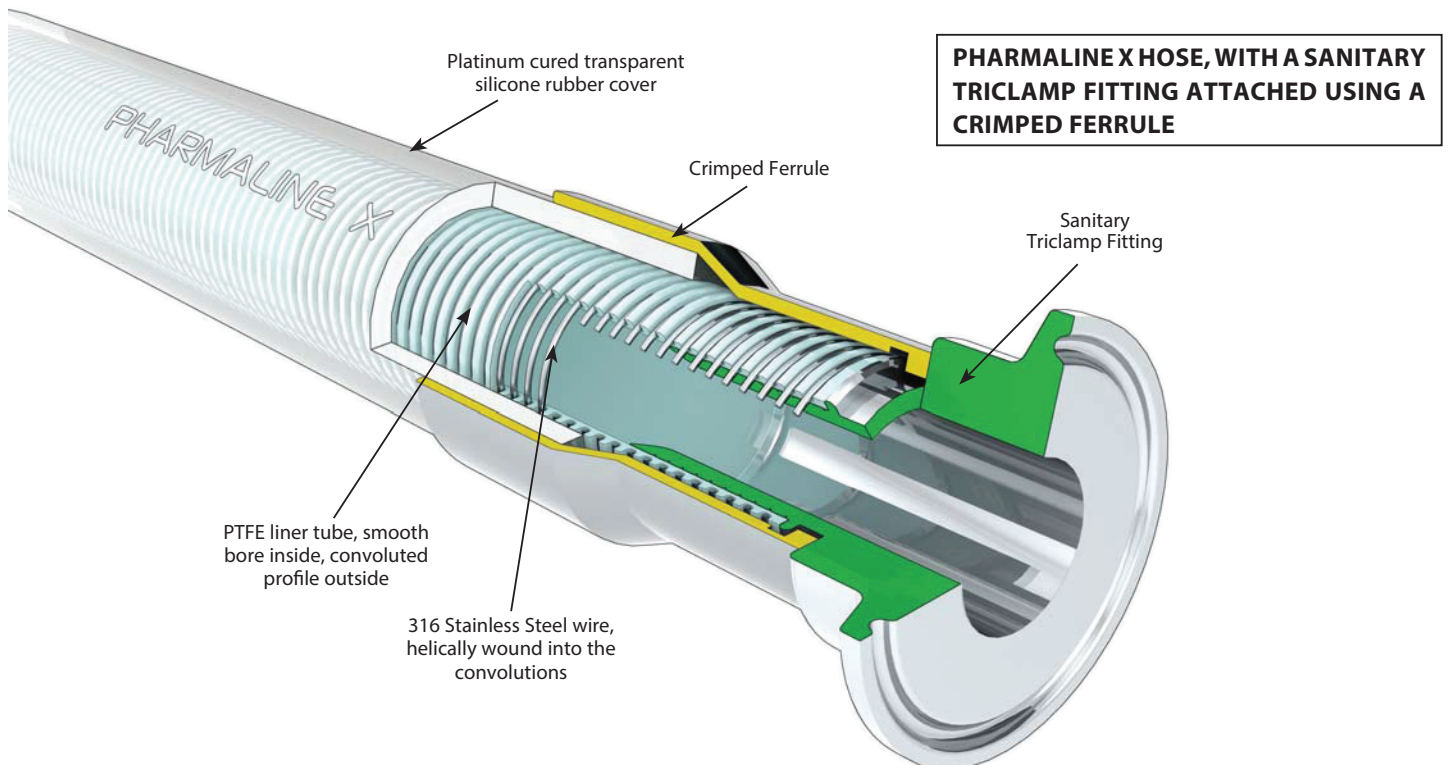
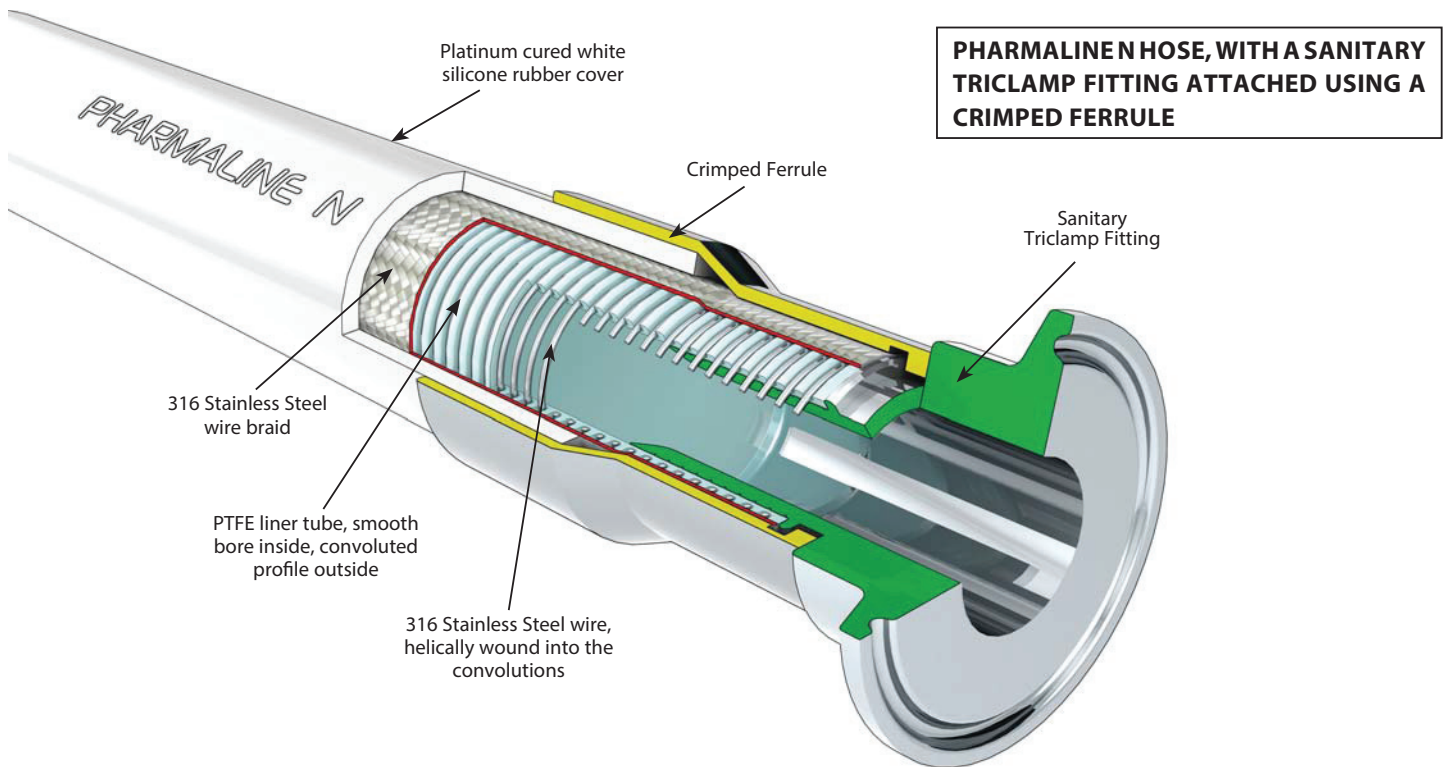
Technically trained Aflex Hose Sales Staff are available to respond quickly and effectively to every kind of enquiry, and to advise the optimum hose solution for any application.

Pharmaline PTFE Liner Tube



The internal surface around the inside of the bend is kept smooth by the axial compression of the rib sections against the helix wire - See 'The Inside Story' in the 'videos' section of our website www.aflex-hose.com.

Pharmaline N and X Hose Descriptions



Design Features

Pharmaline N includes a grade 316 stainless steel wire braid for additional strength and resistance to high internal pressures.

Pharmaline X does not include a braid and is designed for lighter duty, lower pressure applications.

Pharmaline N and X hose designs provide superior alternatives to silicone rubber hose and tube for use in Pharmaceutical, Biotech and Fine Chemical manufacturing and research plants. The excellent chemical resistance of the PTFE liner, and the ease of cleaning and resistance to steam sterilising represent important advantages in many applications.

Pharmaline N and X Specifications & Properties

Specifications for Pharmaline N Hose Grades

Nominal Hose Bore Size		Actual Hose Bore Size		Helix Wire	Outside Diameter of Cover		Minimum Bend Radius		*Maximum Working Pressure		Burst Pressure		Weight per Unit Length	
in	mm	in	mm		in	mm	in	mm	Psi	Bar	Psi	Bar	lb/ft	Kg/Mtr
1/4	6.4	0.270	6.8	-	0.460	11.6	3/4	19	1100	80	4641	320	0.11	0.17
3/8	9.5	0.375	9.5	-	0.610	15.5	1	25	1000	70	4061	280	0.14	0.22
1/2	12.7	0.530	13.5	√	0.845	21.4	1 1/2	38	870	60	3480	240	0.25	0.37
5/8	16.0	0.650	16.5	√	0.990	25.2	2	50	725	50	2900	200	0.35	0.52
3/4	19.0	0.780	19.8	√	1.120	28.5	2 1/2	63	650	45	2610	180	0.42	0.65
1	25.4	1.030	26.1	√	1.455	37.0	4	100	580	40	2320	160	0.57	0.88
1 1/4	32.0	1.280	32.5	√	1.755	44.6	5 1/4	130	500	35	2030	140	0.85	1.30
1 1/2	38.0	1.530	38.8	√	2.035	51.7	6.70	170	430	30	1740	120	1.14	1.698
2	50.0	2.030	51.5	√	2.580	65.6	8.270	210	400	28	1624	112	1.58	2.355

*Maximum Working Pressures vary with temperature as in graph below

Specifications for Pharmaline X Hose Grades

Nominal Hose Bore Size		Actual Hose Bore Size		Helix Wire	Outside Diameter of Cover		Minimum Bend Radius		† Maximum Working Pressure		Burst Pressure		Weight per Unit Length	
in	mm	in	mm		in	mm	in	mm	Psi	Bar	Psi	Bar	lb/ft	Kg/Mtr
1/4	6.4	0.270	6.8	-	0.456	11.6	1 1/4	30	109	7.5	435	30	0.06	0.09
3/8	9.5	0.375	9.5	-	0.610	15.5	1 1/2	38	87	6.0	348	24	0.09	0.14
1/2	12.7	0.530	13.5	√	0.845	21.4	2 3/8	60	84	5.8	334	23	0.21	0.32
5/8	16.0	0.650	16.5	√	0.990	25.2	2 1/2	64	72	5.0	290	20	0.19	0.29
3/4	19.0	0.780	19.8	√	1.120	28.5	3	75	72	5.0	290	20	0.37	0.55
1	25.4	1.030	26.1	√	1.455	37.0	4 3/4	110	60	4.0	240	16	0.44	0.81
1 1/4	32.0	1.280	32.5	√	1.755	44.6	5 1/2	120	43	3.0	175	12	0.50	0.75
1 1/2	38.0	1.530	38.8	√	2.035	51.7	7	180	29	2.0	116	8	0.74	1.11
2	50.0	2.030	51.5	√	2.580	65.6	12	300	29	2.0	116	8	1.28	1.91

† Maximum Working Pressures do not vary with temperature

*Maximum Working Pressures (MWP)

The lesser of the MWP for the hose and the MWP of either of the end fittings.

Temperature Limitations

Usable from -73°C, -100°F up to +204°C, +400°F.

Vacuum Limitations

Pharmaline N and X hose is usable at full vacuum up to 140°C, 284°F.

Rolling U Test for Flex Life

(View this in the 'Videos' section of our website)

More than 15 x the flex life to failure compared with other types of rubber covered, smoothbore PTFE lined hose products.

Flexibility

Much less force to bend than any other equivalent smooth bore PTFE lined hose product.

Kink Resistance

(View this in the 'Videos' section of our website)

Much more resistant to kinking than any other equivalent smooth bore PTFE lined hose product.

